



Volume Scavenger Hunt Recording Sheet

<p>Problem on Page A</p>	<p>Problem on Page B</p>
<p>Problem on Page C</p>	<p>Problem on Page D</p>
<p>Problem on Page E</p>	<p>Problem on Page F</p>



Unit 9 Lesson 2

Volume Scavenger Hunt Recording Sheet

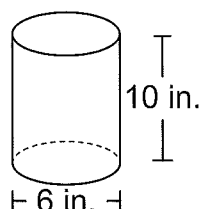
Problem on Page G	Problem on Page H
Problem on Page I	Problem on Page J
Problem on Page K	Problem on Page L

Independent Practice

Volume of Prisms and Cylinders: $V = Bh$

Remember: B represents the area of the base.

Example: Mrs. Krenek keeps cereal in the cylindrical container shown below.



What is the volume of the cylinder?

$$V = Bh$$

$$V = (\pi r^2)h$$

$$V \approx (3.14 \cdot 3^2)10$$

$$V \approx (3.14 \cdot 9)10$$

$$V \approx (28.26)10$$

$$V \approx 282.6 \text{ in.}^3$$

The volume of the cylinder is approximately 282.6 cubic inches.

Volume of Spheres: $V = \frac{4}{3}\pi r^3$

Example:

A piñata in the shape of a basketball is being filled with toys for a birthday party. If the radius of the piñata is 9 inches, approximately how much space is available to fill with toys?

$$V = \frac{4}{3}\pi r^3$$

$$V \approx \frac{4}{3}(3.14)(9^3)$$

$$V \approx \frac{4}{3}(3.14)(729)$$

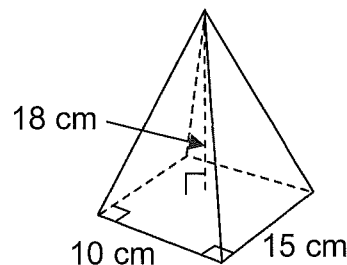
$$V \approx \frac{4}{3}(2289.06)$$

$$V \approx 3,052.08 \text{ in.}^3$$

There are approximately 3,052 cubic inches of space for toys.

Volumes of Pyramids and Cones: $V = \frac{1}{3}Bh$

Example: Isiah built a clay model of an ancient pyramid for his social studies class. What is the volume of the pyramid?



$$V = \frac{1}{3}Bh$$

$$V = \frac{1}{3}(\ell \cdot w)h$$

$$V = \frac{1}{3}(10 \cdot 15)18$$

$$V = \frac{1}{3}(150)18$$

$$V = 50 \cdot 18$$

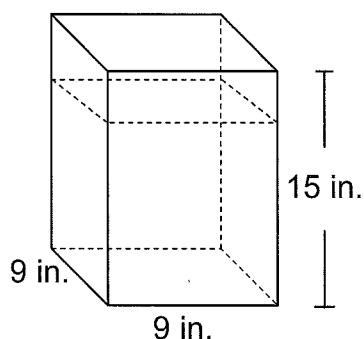
$$V = 900 \text{ cm}^3$$

The volume of the pyramid is 900 cm^3 .



Unit 9 Lesson 2

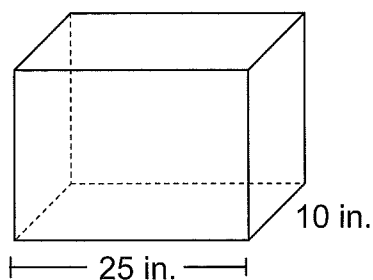
- 1 A movie theater sells popcorn in 3 different-sized containers. The smallest popcorn container is a cone that has a radius of 8 centimeters and a height of 30 centimeters. What is the volume of this popcorn container?
- 2 A spherical hand-blown glass ornament has a diameter of 6 centimeters. What is the approximate volume of the ornament?
- 3 After making the rectangular prism shown below, Sara realized that she needed to trim 3 inches off the height of the prism.



If Sara cuts off the top 3 inches of the prism, what will be the new volume?

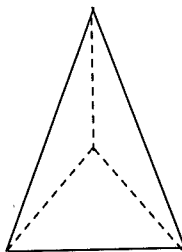
- 4 Juan needs to make a cylinder that has a volume of 628 cubic centimeters. If the radius of the base is 5 centimeters, what will be the height of the cylinder?

- 5 Andre built the storage box shown below out of plywood.



If the storage box has a volume of 3,000 cubic inches, what is the height of the box?

- 6 Nicole made the triangular pyramid shown below.



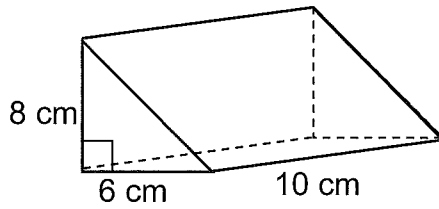
The height of the pyramid is 6 inches and the area of the base of the pyramid is 48 square inches. What is the volume of the pyramid?

- 7 The volume of a cylinder is 301.44 cubic inches. If the area of the base is 37.68 square inches, what is the height of the cylinder?



Unit 9 Lesson 2

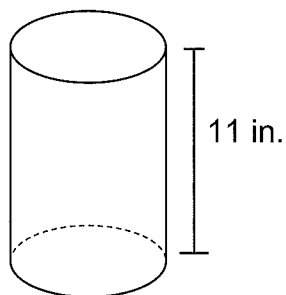
- 8 What is the volume of the prism shown below?



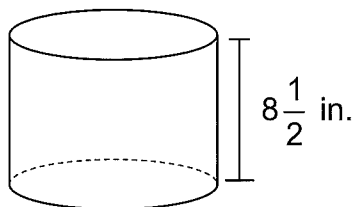
- 9 Mrs. Huffman bought a spherical hummingbird feeder. If the hummingbird feeder has a radius of 2 inches, approximately how many cubic inches of nectar will it hold?

Paper Cylinders

Shawwna has been given one sheet of $8\frac{1}{2}$ inch by 11 inch paper. She has been told to create a cylinder that has the largest possible volume using that sheet of paper. Which cylinder should Shawwna create? Justify your answer.



Cylinder 1



Cylinder 2

FOR TEACHER USE ONLY:

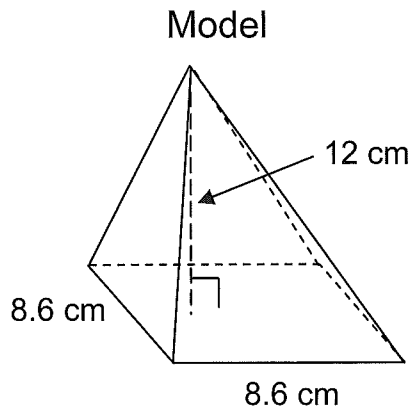
a. YES NO Student arrives at a correct solution?

	4	3	2	1
b. Conceptual Knowledge				
c. Procedural Knowledge				
d. Communication				



Unit 9 Lesson 2

- 1 Joanna created the pyramid shown below.

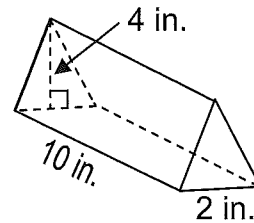


What is the volume of her pyramid?

- 2 Bryan was told to make a rectangular prism that had a volume of 240 cubic inches. The base of his prism measures 8 inches by 6 inches. What will be the height of Bryan's prism?

A 5 in.
B 6 in.
C 10 in.
D 15 in.

- 3 What is the volume of the prism below?



A 20 in.^3
B 40 in.^3
C 60 in.^3
D 80 in.^3

- 4 Monique built a cube that has a height of 12 centimeters. If she had to cut 1 centimeter off the height of her cube, what will be the volume of the rectangular prism that was formed?

A $1,728 \text{ cm}^3$
B $1,584 \text{ cm}^3$
C $1,331 \text{ cm}^3$
D 264 cm^3